

What is claimed is:

1. An iron-base sintered alloy material in which a hard particle is dispersed in a base matrix phase, and which is used for a valve sheet, characterized in that said hard particle is dispersed at 5 to 40% by area ratio, a porosity is 12 to 25% by volume ratio, and a density after sintering is 6.1 to 6.9 g/cm³.
2. An iron-base sintered alloy material according to claim 1, wherein the composition of a base matrix portion consisting of said base matrix phase and said hard particle has a composition containing a total of 10.0 to 40.0 % of one or more selected from Ni: 2.0 to 23.0%, Cr: 0.4 to 15.0%, Mo: 3.2 to 15.0%, Cu: 0.2 to 3.0%, Co: 3.0 to 15.0%, V: 0.1 to 0.5%, Mn: 0.1 to 0.5%, W: 0.2 to 6.0%, C: 0.8 to 2.0%, Si: 0.1 to 1.0% and S: 0.1 to 1.0% by mass, and the balance substantially Fe, said hard particle is a particle composed of one or more elements selected from C, Cr, Mo, Co, Si, Ni, S and Fe.
3. The iron-base sintered alloy material for a valve sheet according to claim 1 or 2, wherein a solid lubricant particle is further dispersed in said base matrix phase at 0.3 to 3.5% by area ratio.
4. The iron-base sintered alloy material according to claim 3, wherein said solid lubricant particle is one or more selected from a sulfide and a fluoride.
5. A process for preparing an iron-base sintered alloy material for a valve sheet, which comprises successively performing a molding step of filling into a mold a raw material powder obtained by blending and mixing 20 to 70% of pure iron powder, 10 to 50% of an alloy iron powder containing a total of 3 to 30% of one or more selected from C, Ni, Cr, Mo, Cu, Co, W, V and Mn, and the balance substantially Fe, and 5 to 40% of a hard particle powder composed of one or more elements selected from C, Cr, Mo, Co, Si, Ni, S and Fe by mass

relative to a total amount of a raw material powder, and adjusting the compressing and molding conditions to compress and mold the raw material powder to obtain a green compact having a predetermined green density, and a sintering step of adjusting the sintering conditions to heat and sinter the green compact in the protective atmosphere to obtain a sintered body, whereby a sintered body having a density after sintering of 6.1 to 6.9 g/cm³ and a porosity by volume ratio of 12 to 25% is obtained.

6. The process for preparing an iron-base sintered alloy material for a valve sheet according to claim 5, wherein a solid lubricant particle powder is further blended into the raw material powder at 0.2 to 3.0 parts by weight relative to 100 parts by weight of a total amount of a raw material powder.

7. The process for preparing an iron-base sintered alloy material for a valve sheet according to claim 5 or 6, wherein in place of a part or all of said alloy iron powder, an alloy element powder of one or more selected from Ni, Cr, Mo, Cu, Co, V, Mn, W and C is blended at a total amount of 0.3 to 15% by weight relative to a total amount of raw material powder.

8. The process for preparing an iron-base sintered alloy material for a valve sheet according to any one of claims 5 to 7, wherein said predetermined green density is 6.2 to 7.0 g/cm³.

9. The process for preparing an iron-base sintered alloy material for a valve sheet according to any one of claims 5 to 7, wherein said sintering conditions are conditions of sintering by heating to a temperature range of 1000 to 1200°C.

10. The process for preparing an iron-base sintered alloy material for a valve sheet according to claim 8, wherein said sintering conditions are conditions of

sintering by heating to a temperature range of 1000 to 1200°C.

11. A valve sheet made of an iron-base sintered alloy, which comprises, as a material, the iron-base sintered alloy material for a valve sheet according to any one of claims 1 to 4.